

Appendix A

Existing Level of Service Calculations

HCM Signalized Intersection Capacity Analysis

1: Skyway #1 & Schmale Lane

Skyway Corridor Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑↑			↑	↑	↑	↑	↑
Volume (vph)	1	362	13	71	1268	12	90	1	137	21	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3534			1775	1583		1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3534			1775	1583		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	393	14	77	1378	13	98	1	149	23	0	11
RTOR Reduction (vph)	0	0	5	0	1	0	0	0	133	0	0	11
Lane Group Flow (vph)	1	393	9	77	1390	0	0	99	16	0	23	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		8	8		7	7	
Permitted Phases			6						8			7
Actuated Green, G (s)	0.7	59.0	59.0	7.3	65.6			10.4	10.4		2.9	2.9
Effective Green, g (s)	0.7	59.0	59.0	7.3	65.6			10.4	10.4		2.9	2.9
Actuated g/C Ratio	0.01	0.62	0.62	0.08	0.69			0.11	0.11		0.03	0.03
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	13	2184	977	135	2425			193	172		54	48
v/s Ratio Prot	0.00	0.11		c0.04	c0.39			c0.06			c0.01	
v/s Ratio Perm			0.01						0.01			0.00
v/c Ratio	0.08	0.18	0.01	0.57	0.57			0.51	0.09		0.43	0.01
Uniform Delay, d1	47.1	7.9	7.0	42.6	7.8			40.2	38.4		45.5	45.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.2	0.0	5.7	1.0			2.3	0.2		5.3	0.1
Delay (s)	49.7	8.1	7.1	48.3	8.8			42.5	38.6		50.9	45.0
Level of Service	D	A	A	D	A			D	D		D	D
Approach Delay (s)		8.1			10.8			40.2			49.0	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM Average Control Delay		14.3			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		95.6			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		60.5%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Pearson Road & Skyway #1

Skyway Corridor Study



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	417	79	393	128	119	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Fr _t	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3409		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3409		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	453	86	427	139	129	911
RTOR Reduction (vph)	0	58	35	0	0	0
Lane Group Flow (vph)	453	28	531	0	129	911
Turn Type		Perm		Prot		
Protected Phases	8		6		5	2
Permitted Phases			8			
Actuated Green, G (s)	21.9	21.9	25.1		7.9	37.0
Effective Green, g (s)	21.9	21.9	25.1		7.9	37.0
Actuated g/C Ratio	0.33	0.33	0.38		0.12	0.55
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	579	518	1279		209	1957
v/s Ratio Prot	c0.26		0.16		c0.07	c0.26
v/s Ratio Perm			0.02			
v/c Ratio	0.78	0.05	0.42		0.62	0.47
Uniform Delay, d1	20.3	15.4	15.5		28.1	9.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.8	0.0	1.0		5.3	0.2
Delay (s)	27.2	15.5	16.5		33.4	9.2
Level of Service	C	B	B		C	A
Approach Delay (s)	25.3		16.5		12.2	
Approach LOS	C		B		B	
Intersection Summary						
HCM Average Control Delay		16.6	HCM Level of Service		B	
HCM Volume to Capacity ratio		0.59				
Actuated Cycle Length (s)		66.9	Sum of lost time (s)		8.0	
Intersection Capacity Utilization		54.6%	ICU Level of Service		A	
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

7: Elliott Road & Skyway #1

Skyway Corridor Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	49	29	168	8	68	12	404	111	191	836	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00			1.00			1.00	0.95		1.00	0.95	
Fr _t	0.95			0.96			1.00	0.97		1.00	1.00	
Flt Protected	0.99			0.97			0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769			1733			1770	3425		1770	3536	
Flt Permitted	0.96			0.74			0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1712			1331			1770	3425		1770	3536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	53	32	183	9	74	13	439	121	208	909	5
RTOR Reduction (vph)	0	20	0	0	16	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	76	0	0	250	0	13	539	0	208	914	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)	20.4			20.4			0.7	37.5		14.7	51.5	
Effective Green, g (s)	20.4			20.4			0.7	37.5		14.7	51.5	
Actuated g/C Ratio	0.24			0.24			0.01	0.44		0.17	0.61	
Clearance Time (s)	4.0			4.0			4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0			3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	413			321			15	1518		308	2153	
v/s Ratio Prot							0.01	c0.16		c0.12	c0.26	
v/s Ratio Perm	0.04			c0.19								
v/c Ratio	0.18			0.78			0.87	0.36		0.68	0.42	
Uniform Delay, d1	25.5			30.0			41.9	15.6		32.7	8.7	
Progression Factor	1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2			11.3			162.9	0.7		5.8	0.6	
Delay (s)	25.7			41.3			204.8	16.2		38.5	9.3	
Level of Service	C			D			F	B		D	A	
Approach Delay (s)	25.7			41.3				20.5			14.7	
Approach LOS	C			D				C			B	
Intersection Summary												
HCM Average Control Delay	20.3			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.55											
Actuated Cycle Length (s)	84.6			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	57.1%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Oliver Street & Skyway #1

Skyway Corridor Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	189	14	2	2	93	361	15	3	836	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.85			0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1767		1770	3518		1770	3508	
Flt Permitted	0.75	1.00			0.58		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1388	1583			1073		1770	3518		1770	3508	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	0	205	15	2	2	101	392	16	3	909	57
RTOR Reduction (vph)	0	179	0	0	2	0	0	3	0	0	7	0
Lane Group Flow (vph)	68	26	0	0	17	0	101	405	0	3	959	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4				8		5	2		1	6
Permitted Phases	4				8							
Actuated Green, G (s)	8.6	8.6			8.6		23.0	46.6		0.7	24.3	
Effective Green, g (s)	8.6	8.6			8.6		23.0	46.6		0.7	24.3	
Actuated g/C Ratio	0.13	0.13			0.13		0.34	0.69		0.01	0.36	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	200			136		600	2414		18	1255	
v/s Ratio Prot		0.02					0.06	c0.12		0.00	c0.27	
v/s Ratio Perm	c0.05				0.02							
v/c Ratio	0.39	0.13			0.13		0.17	0.17		0.17	0.76	
Uniform Delay, d1	27.2	26.3			26.3		15.7	3.8		33.3	19.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.3			0.4		0.6	0.2		4.3	2.8	
Delay (s)	28.6	26.6			26.7		16.3	3.9		37.7	22.1	
Level of Service	C	C			C		B	A		D	C	
Approach Delay (s)		27.1			26.7			6.4			22.1	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM Average Control Delay		18.4			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.44										
Actuated Cycle Length (s)		67.9			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		52.5%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Skyway #1 & Maxwell Drive

Skyway Corridor Study

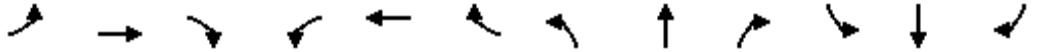


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	428	62	175	840	79	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Fr _t	0.98		1.00	1.00	0.95	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3472		1770	3539	1710	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	3472		1770	3539	1710	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	465	67	190	913	86	59
RTOR Reduction (vph)	16	0	0	0	35	0
Lane Group Flow (vph)	516	0	190	913	110	0
Turn Type			Prot			
Protected Phases	2		1	6		
Permitted Phases					8	
Actuated Green, G (s)	15.9		32.2	52.1	9.6	
Effective Green, g (s)	15.9		32.2	52.1	9.6	
Actuated g/C Ratio	0.23		0.46	0.75	0.14	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	792		818	2645	236	
v/s Ratio Prot	c0.15		0.11	c0.26		
v/s Ratio Perm				c0.06		
v/c Ratio	0.65		0.23	0.35	0.46	
Uniform Delay, d1	24.4		11.3	3.0	27.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.9		0.7	0.4	1.4	
Delay (s)	26.3		12.0	3.4	29.1	
Level of Service	C		B	A	C	
Approach Delay (s)	26.3			4.8	29.1	
Approach LOS	C			A	C	
Intersection Summary						
HCM Average Control Delay	13.2		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.43					
Actuated Cycle Length (s)	69.7		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	41.2%		ICU Level of Service		A	
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

10: Bille Road & Skyway #1

Skyway Corridor Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	86	100	278	64	22	30	258	183	11	640	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.95
Fr _t	1.00	0.92		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1712		1770	1791		1770	1863	1583	1770	3520	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1712		1770	1791		1770	1863	1583	1770	3520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	29	93	109	302	70	24	33	280	199	12	696	26
RTOR Reduction (vph)	0	42	0	0	15	0	0	0	113	0	2	0
Lane Group Flow (vph)	29	160	0	302	79	0	33	280	86	12	720	0
Turn Type	Prot			Prot			Prot		Perm		Prot	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	10.5	15.4		19.2	24.1		3.2	38.9	38.9	0.7	36.4	
Effective Green, g (s)	10.5	15.4		19.2	24.1		3.2	38.9	38.9	0.7	36.4	
Actuated g/C Ratio	0.12	0.17		0.21	0.27		0.04	0.43	0.43	0.01	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	206	292		377	479		63	803	683	14	1420	
v/s Ratio Prot	0.02	c0.09		c0.17	0.04		c0.02	0.15		0.01	c0.20	
v/s Ratio Perm									0.05			
v/c Ratio	0.14	0.55		0.80	0.17		0.52	0.35	0.13	0.86	0.51	
Uniform Delay, d1	35.8	34.2		33.7	25.3		42.8	17.2	15.4	44.7	20.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	2.1		11.6	0.2		7.6	1.2	0.4	164.6	1.3	
Delay (s)	36.1	36.3		45.3	25.5		50.4	18.4	15.8	209.3	21.5	
Level of Service	D	D		D	C		D	B	B	F	C	
Approach Delay (s)		36.3			40.6			19.4			24.5	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM Average Control Delay		28.0			HCM Level of Service				C			
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		90.2			Sum of lost time (s)				16.0			
Intersection Capacity Utilization		61.0%			ICU Level of Service				B			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Skyway #1 & Schmale Lane

Skyway Corridor Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑↑			↑	↑	↑	↑	↑
Volume (vph)	10	1136	75	137	719	40	58	3	138	40	5	3
Ideal Flow (vphpl)	1900	1900	1900	1700	1700	1700	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1583	3142			1778	1583		1783	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1583	3142			1778	1583		1783	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1235	82	149	782	43	63	3	150	43	5	3
RTOR Reduction (vph)	0	0	25	0	3	0	0	0	136	0	0	3
Lane Group Flow (vph)	11	1235	57	149	822	0	0	66	14	0	48	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		8	8		7	7	
Permitted Phases			6						8			7
Actuated Green, G (s)	0.8	56.4	56.4	10.0	65.6			8.7	8.7		3.9	3.9
Effective Green, g (s)	0.8	56.4	56.4	10.0	65.6			8.7	8.7		3.9	3.9
Actuated g/C Ratio	0.01	0.59	0.59	0.11	0.69			0.09	0.09		0.04	0.04
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	15	2101	940	167	2170			163	145		73	65
v/s Ratio Prot	0.01	c0.35		c0.09	0.26			c0.04			c0.03	
v/s Ratio Perm			0.04						0.01			0.00
v/c Ratio	0.73	0.59	0.06	0.89	0.38			0.40	0.09		0.66	0.00
Uniform Delay, d1	47.0	12.0	8.1	42.0	6.2			40.7	39.5		44.9	43.7
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	103.2	1.2	0.1	40.2	0.5			1.6	0.3		19.3	0.0
Delay (s)	150.2	13.3	8.3	82.2	6.7			42.4	39.8		64.2	43.7
Level of Service	F	B	A	F	A			D	D		E	D
Approach Delay (s)		14.1			18.2			40.6			63.0	
Approach LOS		B			B			D			E	
Intersection Summary												
HCM Average Control Delay		18.9			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		95.0			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		59.9%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Pearson Road & Skyway #1

Skyway Corridor Study



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	259	113	1012	283	116	603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Fr _t	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3423		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3423		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	123	1100	308	126	655
RTOR Reduction (vph)	0	93	26	0	0	0
Lane Group Flow (vph)	282	30	1382	0	126	655
Turn Type		Perm		Prot		
Protected Phases	8		6		5	2
Permitted Phases			8			
Actuated Green, G (s)	14.8	14.8	25.5		7.6	37.1
Effective Green, g (s)	14.8	14.8	25.5		7.6	37.1
Actuated g/C Ratio	0.25	0.25	0.43		0.13	0.62
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	437	391	1457		225	2192
v/s Ratio Prot	c0.16		c0.40		c0.07	0.19
v/s Ratio Perm			0.02			
v/c Ratio	0.65	0.08	0.95		0.56	0.30
Uniform Delay, d1	20.2	17.3	16.6		24.6	5.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.1	14.1		3.2	0.1
Delay (s)	23.5	17.4	30.7		27.7	5.4
Level of Service	C	B	C		C	A
Approach Delay (s)	21.6		30.7		9.0	
Approach LOS	C		C		A	
Intersection Summary						
HCM Average Control Delay		22.7	HCM Level of Service		C	
HCM Volume to Capacity ratio		0.79				
Actuated Cycle Length (s)		59.9	Sum of lost time (s)		12.0	
Intersection Capacity Utilization		67.8%	ICU Level of Service		C	
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

7: Elliott Road & Skyway #1

Skyway Corridor Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	17	11	162	17	178	40	1008	210	189	620	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0				4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00				1.00		1.00	0.95		1.00	0.95	
Fr _t	0.96				0.93		1.00	0.97		1.00	1.00	
Flt Protected	0.99				0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765				1699		1770	3448		1770	3538	
Flt Permitted	0.92				0.83		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1645				1450		1770	3448		1770	3538	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	10	18	12	176	18	193	43	1096	228	205	674	2
RTOR Reduction (vph)	0	9	0	0	39	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	31	0	0	348	0	43	1309	0	205	676	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4				8		1	6		5	2
Permitted Phases	4				8							
Actuated Green, G (s)	25.6				25.6		2.2	37.5		15.5	50.8	
Effective Green, g (s)	25.6				25.6		2.2	37.5		15.5	50.8	
Actuated g/C Ratio	0.28				0.28		0.02	0.41		0.17	0.56	
Clearance Time (s)	4.0				4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0				3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465				410		43	1427		303	1984	
v/s Ratio Prot							0.02	c0.38		c0.12	0.19	
v/s Ratio Perm	0.02				c0.24							
v/c Ratio	0.07				0.85		1.00	0.92		0.68	0.34	
Uniform Delay, d1	23.8				30.7		44.2	25.1		35.2	10.8	
Progression Factor	1.00				1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1				15.1		137.2	10.8		5.9	0.5	
Delay (s)	23.8				45.8		181.4	35.9		41.1	11.3	
Level of Service	C				D		F	D		D	B	
Approach Delay (s)	23.8				45.8			40.5			18.2	
Approach LOS	C				D			D			B	

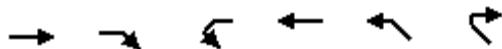
Intersection Summary

HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

9: Skyway #1 & Maxwell Drive

Skyway Corridor Study



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	975	100	61	641	55	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Fr _t	0.99		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3490		1770	3539	1700	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	3490		1770	3539	1700	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	109	66	697	60	52
RTOR Reduction (vph)	9	0	0	0	47	0
Lane Group Flow (vph)	1160	0	66	697	65	0
Turn Type			Prot			
Protected Phases	2		1	6		
Permitted Phases					8	
Actuated Green, G (s)	26.2		22.2	52.4	6.8	
Effective Green, g (s)	26.2		22.2	52.4	6.8	
Actuated g/C Ratio	0.39		0.33	0.78	0.10	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1361		585	2760	172	
v/s Ratio Prot	c0.33		0.04	c0.20		
v/s Ratio Perm				c0.04		
v/c Ratio	0.85		0.11	0.25	0.38	
Uniform Delay, d1	18.7		15.7	2.0	28.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	5.4		0.4	0.2	1.4	
Delay (s)	24.1		16.0	2.2	29.6	
Level of Service	C		B	A	C	
Approach Delay (s)	24.1			3.4	29.6	
Approach LOS	C			A	C	
Intersection Summary						
HCM Average Control Delay	16.7		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.53					
Actuated Cycle Length (s)	67.2		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	49.5%		ICU Level of Service		A	
Analysis Period (min)	15					
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

10: Bille Road & Skyway #1

Skyway Corridor Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑	↑	↑	↑↑	
Volume (vph)	37	75	68	217	117	57	96	594	330	44	383	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Fr _t	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1730		1770	1771		1770	1863	1583	1770	3504	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1730		1770	1771		1770	1863	1583	1770	3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	40	82	74	236	127	62	104	646	359	48	416	30
RTOR Reduction (vph)	0	34	0	0	22	0	0	0	191	0	5	0
Lane Group Flow (vph)	40	122	0	236	167	0	104	646	168	48	441	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	9.6	12.9		16.2	19.5		6.1	37.2	37.2	3.1	34.2	
Effective Green, g (s)	9.6	12.9		16.2	19.5		6.1	37.2	37.2	3.1	34.2	
Actuated g/C Ratio	0.11	0.15		0.19	0.23		0.07	0.44	0.44	0.04	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	199	261		336	404		126	812	690	64	1403	
v/s Ratio Prot	0.02	c0.07		c0.13	0.09		0.06	c0.35		c0.03	0.13	
v/s Ratio Perm									0.11			
v/c Ratio	0.20	0.47		0.70	0.41		0.83	0.80	0.24	0.75	0.31	
Uniform Delay, d1	34.4	33.1		32.3	28.1		39.1	20.8	15.2	40.8	17.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	1.3		6.5	0.7		33.7	7.9	0.8	38.4	0.6	
Delay (s)	34.9	34.4		38.9	28.8		72.8	28.8	16.0	79.1	18.1	
Level of Service	C	C		D	C		E	C	B	E	B	
Approach Delay (s)		34.5			34.4			28.8			24.1	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM Average Control Delay		29.3			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		85.4			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		68.1%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: Oliver Street & Skyway #1

Skyway Corridor Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↗	↑ ↘			↗ ↘		↑ ↗	↑ ↘		↑ ↗	↑ ↘	
Volume (vph)	51	10	138	63	28	7	177	999	35	11	610	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.86			0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1602			1786		1770	3521		1770	3501	
Flt Permitted	0.72	1.00			0.59		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1346	1602			1080		1770	3521		1770	3501	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	11	150	68	30	8	192	1086	38	12	663	52
RTOR Reduction (vph)	0	128	0	0	4	0	0	2	0	0	10	0
Lane Group Flow (vph)	55	33	0	0	102	0	192	1122	0	12	705	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	10.2	10.2			10.2		27.4	46.4		0.7	19.7	
Effective Green, g (s)	10.2	10.2			10.2		27.4	46.4		0.7	19.7	
Actuated g/C Ratio	0.15	0.15			0.15		0.40	0.67		0.01	0.28	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	198	236			159		700	2357		18	995	
v/s Ratio Prot		0.02					0.11	c0.32		0.01	c0.20	
v/s Ratio Perm	0.04			c0.09								
v/c Ratio	0.28	0.14		0.64			0.27	0.48		0.67	0.71	
Uniform Delay, d1	26.3	25.7		27.8			14.2	5.6		34.2	22.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.3		8.2			1.0	0.7		66.1	2.3	
Delay (s)	27.0	26.0		36.0			15.2	6.2		100.3	24.6	
Level of Service	C	C		D			B	A		F	C	
Approach Delay (s)		26.3			36.0			7.5			25.8	
Approach LOS		C			D			A			C	

Intersection Summary

HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			